DOCUMENT RESUME

ED 281 813 SO 018 154

AUTHOR Kvale, Katherine; Delehanty, James
TITLE Food and Famine: A Game Simulation.
PUB DATE 86
NOTE 28p.; Paper presented at the Meeting of the National Council for Geographic Education (Chicago, IL, October 9-12, 1986). Sample game pieces will not reproduce clearly.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Developing Nations; *Educational Games; *Farmers; Foreign Countries; Higher Education; High Schools; *Living Standards; Quality of Life; *Role Playing; Simulation
IDENTIFIERS Africa (West); *Sahel

ABSTRACT

This game simulates trade and food production in the West African region of the Sahel which is susceptible to drought. Players are divided into teams of two and four persons, each team assuming the role of a farming household in the Sahel. Teammates collaborate on production and trade decisions under conditions of dearth and plenty. The game carries players through seven years of decision making in two to three hours. Intended for classroom use, the simulation is particularly suited to use in secondary and college level courses dealing with the Third World, peasant agriculture, or famine. Sample game pieces and complete instructions are included. (Author/APG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED281813

National Council for Geographic Education (NCGE)
Chicago, IL. October 9-12, 1986

Food and Famine: A Game Simulation by

Dr. Katherine Kvale
Department of Geography
University of Wisconsin-Eau Claire
Eau Claire, WI 54701

and

Mr. James Delehanty
Department of Geography
University of Minnesota
Minneapolis, MN 55455

Abstract

This game simulates food production and trade in a peasant society that is particularly susceptible to drought. Players are divided into teams of two to four persons, each team assuming the role of a farming household in the Sahel of West Africa. Teammates collaborate on production and trade decisions under conditions of dearth and plenty. The game carries players through seven years of decision-making in two or three hours. Intended for classroom use, and not copyrighted, the simulation is particularly suited to use in secondary and college level courses dealing with the Third World, peasant agriculture, or famine. Sample game pieces and complete instructions are available for duplication.

INTRODUCTION

This game is intended to be fun, but more importantly, to teach you about the real decisions, dilemmas, and crises faced by villagers in the Third World. The setting is Sahelian West Africa, but the situation is representative of small, agriculturally based societies anywhere in the less developed world. You will assume the role of a small farmer and his family and the game will take you through approximately seven years of decision-making. You will be forced to decide--as small farmers must--how you will provide food for your household under conditions that are sometimes dire. You will face years of plenty and seasons of failure, including drought, pests, disease, and political turmoil. The object of the game is to provide an understanding of the actual dynamics of food and famine for much of the world's population.

SO018154

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
James Delehanty
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

FIRST INSTRUCTIONS

You will find seven tables; one table (at the head of the room) is the village market and the chief's residence at Baban Mutum. The other six tables are the households that comprise the agricultural village. Pair up and choose one of the six tables. There you will find cards of different colors and sizes, which are your playing pieces for the game.

-- Cards for people: large-women
small-girls
large-men
small-boys

Names are printed on the cards in pencil. Ages of the children are also printed. The cards for unborn children are on a corner of the table, upside-down.

-- Animals: camels
cows
donkeys

-- Grain: each yellow card represents five baskets of millet

-- Money: 100 franc notes
1000 franc notes
10,000 franc notes

-- Fields: each 8 1/2 x 11 inch paper represents one field

You will find as you take your places at the tables that chance, fortune, or God (whichever interpretation you prefer) has treated you differently from your neighbors. Some of you will suddenly find yourselves members of families rich in children and poor in everything else. At least one table is home to a bachelor farmer rich in everything but wives. Each family group, in other words, is starting the game with its own set of advantages and disadvantages (a situation that approximates the real world). Your challenge, then, is not so much to compete with your neighbors for wealth but rather to make wise choices, appropriate to your own set of circumstances, that will insure your survival and comfort in the years ahead.

THE WORLD ACCORDING TO THE GAME

The game takes you and your surrogate family through six or seven calendar years. Your object is to always have the ability to feed your family. In practical terms this will normally mean producing enough food at each harvest to last your family at least one year.

The game tries to duplicate many conditions and decisions faced by Sahelian farmers. On the other hand, for the game to conclude in two hours rather than seven years we have found it necessary to make several simplifying assumptions. Here they are:

1. People marry, children are born and become adults, but adults do not age. You must keep track of the ages of your children, but once the child has become an adult you can stop counting.
2. Children become adults at age 15. When a child turns 15 turn his card in for an adult card.
3. All family members must be fed, but children under age 6 do not work.
4. Children age at three times the normal rate. In other words, at the beginning of a new year all your children become not one year older but three years older (e.g. a newborn turns three at the beginning of the next year; a 7 year old turns 10).
5. Young people may marry at age 15. The young woman joins the household of her husband. A man's family should expect to pay a dowry of 10,000 francs (or its equivalent) to the family of the young woman at the time of marriage, but it is up to you to negotiate (the market may bear a higher or lower price).
6. A man may have any number of wives, but a wife may have only one husband. A new wife always joins the family of her husband immediately.
7. No new households may be formed. Your household may include many married people (an extended family), but no one may break away.
8. A viable household must include at least one adult.
9. Land is abundant. You may plant as many fields as you choose provided you have sufficient labor available.
10. Laborers may be hired, at whatever price you settle on, but the hiring household must feed the laborer.
11. The market at Baban Mutum may, at certain times (but not always), buy and sell grain and animals. Current buying and selling prices will be posted. You may, however, buy or sell with other households at any time and for any price you can agree on.
12. Grain may be stored indefinitely at your home, but beware; pests or mold may deplete your stock.
13. Wealth may also be stored in the form of cash or livestock, but money is susceptible to tax and inflation and livestock is susceptible to disease and price fluctuation.
14. Livestock serves strictly as a means of storing wealth (though an astute player may gain an advantage by speculating on livestock prices). Animal products in this game (unlike the real Sahel) are not consumed.
15. Only millet is consumed.

THE WAY THE GAME IS PLAYED

In most of the Sahel there are two readily distinguishable seasons of the year, dry and wet. The dry season lasts from October through late May. The rainy season begins before the first of June and ends some time in September. Crops are planted soon after the rains begin, they grow for about 110 days, and then they are harvested. Let us think, therefore, of four Sahelian seasons rather than two: (1) the planting season, (2) the growing season, (3) the harvest season, and (4) the long dry season.

The first bell. The game begins with the sounding of the first bell. The first bell means that the planting season has begun. Your first decision is to determine the number of fields you wish to plant. There is no cost for fields. You are, however, constrained by the amount of labor available to you. It takes two adults, or one adult and two children (over age 6) to work a field. There are no half fields or partial fields. If your family is composed of only one adult and less than two children, you have insufficient labor to plant; you will have to hire labor or arrange a marriage in order to plant. You may choose not to plant. If your family is composed of three adults and six working-age children you may plant up to three fields--or more if you hire additional labor. If your family is composed of 4 adults you may plant two fields. A simple way of calculating labor requirements is to count each adult as half a labor unit (1/2), and each working-age child as one quarter of a labor unit (1/4). One field requires one labor unit.

You are faced with one other constraint as you calculate the number of fields you will plant. You need seed. Five baskets of millet are sufficient to plant one field. For two fields you will need ten baskets, etc.

So go to the front table and deposit five baskets of millet for each field sheet (the big colored paper) you take. If you need more millet to plant, you'd better find someone willing to sell.

How many fields should you plant? The answer to that question depends on the strategy you adopt, but in general if you have enough labor it is wise to plant as many fields as you can. Land is free. Seed is usually cheap. Remember, you must have enough food on hand to feed your family. Presumably you will grow most of it yourself. Keep in mind the following facts:

One field, in a good year, produces 100 baskets of grain.

An adult consumes 30 baskets per year; a child (under age 15) consumes 15 baskets.

The second bell. After about ten minutes a second bell will ring. The second bell signals the start of the growing season. Listen carefully at this point because announcements will be made that will affect your crops and your family.

What sorts of announcements should you expect? Here is a list of possibilities and a rough estimation of the percent chance a particular event will strike in a given year.

A political event causes rapid inflation (5%)
A new tax is imposed on peasants (15%)
A drought decreases likely crop yields (30%)
A flood decreases likely crop yields (10%)
Excellent weather increases likely crop yields (20%)
An epidemic kills or cripples a child (20%)
A married woman gives birth (50%)
Insects or rodents partly destroy planted crops (10%)
Insects or rodents partly destroy stored millet (20%)
A disease destroys some animals (20%)
An adult dies (5%)

The growing season lasts about five minutes. It might be a good time to arrange a marriage or to buy or sell whatever you would like. Note that market prices for grain and animals at Baban Mutum will change as announcements are made about local conditions.

The third bell. At the third bell all activity ceases. The harvest has come. An announcement will be made telling you how much millet your fields have produced. Come to the front table to collect the millet your fields have produced. If you have planted two fields, for example, and each field this year produced 100 baskets, come and collect two hundred baskets. If, after the harvest, you do not have enough millet to feed your family during the coming year (i.e., 30 baskets for each adult and 15 baskets for each child) act fast. Sell something or collect a dowry for a marriageable daughter. Borrow if you can find a willing lender (arranging acceptable terms, of course).

The fourth bell. The fourth bell will sound five minutes later. Come to the front table and deposit the millet necessary for your family's survival during the coming year (30 baskets for each adult and 15 baskets for each child). If the millet you have on hand at this point is insufficient, deposit instead the appropriate number of adults or children in the village cemetery. Then add three years to the ages of your remaining children because the next round (the next planting season) will begin shortly.

ADDITIONAL PROCEDURE

All transactions at the front table will be on an honor system. The game has no "banker." If you are buying or selling animals or grain at the Baban Mutum market refer to the current prices posted. It is up to you, each planting season to put five baskets (of seed) down on each field you will plant. It is up to you at each harvest to collect (at the front table) the number of baskets of millet your fields have produced. It is up to you, at the fourth bell, to deposit (at the front table) the millet your family requires for survival.

The game may seem complicated as you read these instructions the first time. The game is not difficult, however. It will become clearer to you after one or two rounds. You will be working in groups of two or three. Figure things out together. Arrive at a strategy appropriate to your own family's conditions.

Appendix A

Names for your children

As children are born you might want to assign them names. A child's surname (last name) is his father's first name. Here is a list of common first names to give your children.

Boys	Girls
Aboubacar	Amina
Adamou	Abou
Amadou	Hawa
Abara	Nana
Boubacar	Sarkina
Boukary	Mariama
Hamidou	Rabi
Halilou	Halima
Issoufou	Seybatou
Ibrahim	Zeynabou
Issa	Ouma
Lawaly	Fatima
Mohammadou	Aisha
Mamadou	Aishatou
Maman	Karima
Moussa	Rekia
Ousmane	
Oumarou	
Rabe	
Salifou	
Tahirou	

FOOD AND FAMINE SIMULATION GAME
Instructor's Guide

The game is really quite easy to set up and to lead. It is also adaptable: you may want to simplify it, or, more likely, add new elements to make it closer to real-life circumstances in parts of the world with which you are familiar.

Setting up the game

1. Lay out the tables with appropriate game pieces. Each household (each table) receives the prices listed on the back pages of this guide. Thus, for example, Household #1 (Moussa Ibrahim) should have cards for the two adults listed, and for the four children. It also should have grain cards equal to 100 baskets, one camel card, one donkey card, and 500 francs. At every table there should be a stack (off to one side) of child cards for unborn children.

2. If fewer than eight households are required in your classroom (i.e., if you are playing with only a few people), we recommend omitting first Household #8, then Household #7, etc.

3. Provide pencils. Ask that names and ages be recorded on the cards in pencil so that the cards may be re-used.

4. You should sit at a separate table, in front of the blackboard, at the head of the room. The head table serves as the village market and the chief's residence. We have called it the market at Baban Mutum (Hausa for "Big Man"). There you should have, in neat piles, a supply of money, grain and animal cards, spare "adult cards," and 8 1/2 by 11 inch sheets of paper that represent fields.

5. Allow students to form teams as they choose, making sure only that they are evenly distributed among the tables. Do not allow the players to disturb the game pieces until the idea and the rules of the games are clearly defined.

As you play

1. Concern yourself during the game with ringing the bells, posting prices, making announcements, and reminding players what must be done at each bell. Leave the "banking" to an honor system.

2. Follow the playbook (appended here) as you make announcements, and as you change the posted prices at the market.

3. There are usually no announcements at the first bell (except, "okay, plant your fields"), nor at the fourth bell (except, "okay, this is the annual crisis, turn in the millet your family must consume").

4. Do remind the players to "age" their children three years after the fourth bell of each round, and remind them that when a child turns 15 his/her card must be exchanged for an adult card.

Additional information

1. It is useful to remind players early in the game that children under 6 cannot be counted as laborers but still must be fed.

2. Millet prices are marked (at the market) per basket, but each grain card represents 5 baskets. It is not possible in this game to buy or sell millet except in multiples of 5 baskets. Post the buying price (the price the market will pay) and the selling price (the price the player will pay at the market) for grain and for the various animals and keep those prices updated as the game progresses.

3. The multiples of 5 make grain prices confusing at first. Use the following chart for reference:

Posted Grain Price (francs)		Value of Five Baskets of Grain (1 card)
40 francs/basket	(x5=)	200
60	(x5=)	300
80	(x5=)	400
100	(x5=)	500
120	(x5=)	600
140	(x5=)	700
160	(x5=)	800
180	(x5=)	900
200	(x5=)	1000
220	(x5=)	1100
240	(x5=)	1200
260	(x5=)	1300
280	(x5=)	1400
300	(x5=)	1500

Possible questions for students to answer after they have played the game:

1. Describe the situation of your family at the beginning of the game, including particular advantages or disadvantages you had to work with.

2. Explain the strategy you used to keep your family alive. Did you make any exceptionally wise or disastrous moves? If your strategy changed as the game progressed, explain how and why. In what respects did you succeed or fail?

3 Speculate on the following: A cement factory is built in a large town only a few days from Baban Mutum (your village). The factory hires a few year-round workers (not necessarily from Baban Mutum) and also takes on workers temporarily during the dry season. Wages are modest, but far beyond what can be earned in the village through farming. What would the impact be in Baban Mutum? Try to think this through and try to be specific as you can about possible consequences-positive and negative. Remember that the factory is not within daily commuting distance.

4. How could this game be improved? (optional, for extra points)

PLAYBOOK

Round 1 (1986) Remember:1 grain card = 5 baskets!!!

Bell	Announcements	Buying Price	Selling Price
1 (PLANTING)	none	millet 80/basket	100/basket
		camels 20,000	22,000
		cattle 8,000	10,000
		donkeys 4,000	5,000
2 (GROWING)	measles. All 3 and 4 year olds die.	millet 80/basket	100/basket
		camels 20,000	22,000
		cattle 8,000	10,000
		donkeys 4,000	5,000
	rains look good		
	all married women on left side of room bear a child		
3 (HARVEST)	very good harvest	millet 60/basket	80/basket
		camels 18,000	20,000
	each field produces 140 baskets of millet	cattle 6,000	8,000
		donkeys 4,000	5,000
4.(DRY SEASON CRISIS)	none	millet 80/basket	100/basket
		camels 20,000	22,000
		cattle 8,000	10,000
		donkeys 4,000	5,000

Round 2 (1987)

Bell	Announcements	Buying Price	Selling Price
1 (PLANTING)	none	unchanged	unchanged
2 (GROWING)	mid-way into the growing season there's still no rain	millet 120/basket camels 18,000 cattle 6,000 donkeys 4,000	160/basket 20,000 8,000 5,000
	all married women on right side of room have a child. one of the children born at the front-right table is crippled--will never be able to work		
	rains very sparse. looks like a bad year		
3 (HARVEST)	poor harvest because of drought. each field produces 50 baskets	millet 160/basket camels 12,000 cattle 4,000 donkeys 3,000	200/basket 14,000 6,000 4,000
4.(DRY SEASON CRISIS)	none	unchanged	

Round 3 (1988)

Bell	Announcements	Buying Price	Selling Price
1 (PLANTING)	all cattle die for lack of feed (except those owned by market)	millet 160/basket camels 10,000 cattle 2,000 donkeys 2,000	unchanged 12,000 market not selling 3,000
2 (GROWING)	if a household has more than one donkey, all but one die for lack of feed	millet 160/basket camels 10,000 cattle 1,000 donkeys 1,000	180/basket 12,000 2,000 2,000
	all married women on right side of room have a child. On the left side of the room, if a husband has two or more wives, all but one have a child. (If only one wife, no children.)		
	good weather, abundant rains, things look good for coming harvest		
3 (HARVEST)	fine harvest, each field yields 120 baskets	millet 80/basket camels 14,000 cattle 4,000 donkeys 3,000	100/basket 16,000 6,000 4,000
4.(DRY SEASON CRISIS)	none	millet 60/basket camels 16,000 cattle 5,000 donkeys 4,000	80/basket 18,000 7,000 5,000

Round 4 (1989)

Bell	Announcements	Buying Price	Selling Price
1 (PLANTING)	none	unchanged	unchanged
2 (GROWING)	abundant rain last year brings kangaroo rats, which attack millet stored on the farm. All millet you have on hand is cut in half (i.e. you lose half your millet) all married women on left side of room bear one child. rainfall looks average	millet 100/basket camels 16,000 cattle 6,000 donkeys 4,000	120/basket 18,000 8,000 6,000
3 (HARVEST)	average harvest, but those on the right side of the room had many upland (vs. lowland) fields, which suffered a little because rains weren't great. Fields on left side of room yield 100 baskets. On right side of room 80 baskets.	unchanged	unchanged
4.(DRY SEASON CRISIS)	none	unchanged	unchanged

Round 5 (1990)

Bell	Announcements	Buying Price	Selling Price
1 (PLANTING)	none	unchanged	unchanged
2 (GROWING)	very poor rains early in growing season. Planted seedlings die. Everyone must replant (so bring the seeds-the millet-up to the table if you want to replant) all married women on right side of room bear one child. Fatima Yacouba dies of appendicitis rains finally come, but very late.	millet 120/basket camels 16,000 cattle 6,000 donkeys 4,000	140/basket 18,000 8,000 6,000
3 (HARVEST)	less than average harvest because of poor rains. All fields yield 80 baskets.	unchanged	unchanged
4.(DRY SEASON CRISIS)	none	unchanged	unchanged

Round 6 (1991)

Bell	Announcements	Buying Price	Selling Price
1 (PLANTING)	Coup d'Etat in capital city. New govt. imposes a one-time tax of 1000 francs on each adult	millet 100/basket camels 16,000 cattle 6,000 donkeys 4,000	120/basket 18,000 8,000 6,000
2 (GROWING)	All married women on right of room bear one child. Hassan Boubacar dies of pneumonia little rain diarrhea outbreak kills all 3-year-olds Epidemic cuts all camel herds in half. (If you have only one camel, it dies.	millet 120/basket camels 14,000 cattle 5,000 donkeys 3,000	140/basket 16,000 6,000 5,000
3 (HARVEST)	poor harvest. Each field yields 40 baskets	unchanged	unchanged
4.(DRY SEASON CRISIS)	none	millet 120/basket camels 10,000 cattle 6,000 donkeys 4,000	140/basket 12,000 7,000 6,000

Round 7 (1992)

Bell	Announcements	Buying Price	Selling Price
1 (PLANTING)	none	unchanged	unchanged
2 (GROWING)	All married women bear a child.	millet 140/basket camels 10,000	160/basket 12,000
	poor rains	cattle 5,000 donkeys 3,000	6,000 4,000
3 (HARVEST)	Harvest is not much better than last year. 60 baskets per field	unchanged	unchanged
4.(DRY SEASON CRISIS)	none	unchanged	unchanged

Household #1

Moussa Ibrahim
Hamsa Moussa (wife)
Abdov Moussa (son, 14)
Miriama Moussa (daughter, 11)
Adamou Moussa (son, 7)
Amadou Moussa (son, 2)

millet: 100 baskets

animals: 1 camel, one donkey

money: 500 francs

Household #2

Issa Boukary
no family

millet: 150 baskets

animals: 15 cattle

money: 30,000 francs

Household #3

Mohamadou Alio
Aicha Mohamadou (wife)
Hawa Mohamadou (wife)
Zena Mohamadou (daughter, 14)
Ouma Mohamadou (daughter, 13)
Ali Mohamadou (son, 12)
Tanka Mohamadou (son, 10)
Mariama Mohamadou (daughter, 7)
Rekia Mohamadou (daughter, 6)
Amani Mohamadou (son, 4)
Bala Mohamadou (son, 2)
Maman Mohamadou (son, 1)

millet: 70 baskets

animals: 3 donkeys

money: none

Household #4

Seyni Boubacar
- Amina Seyni (wife)
- Seybatou Seyni (wife)
- Sani Seyni (son, 14)
- Hawa Seyni (daughter, 6)

Hassan Boubacar (brother of Seyni Boubacar)
- Fatima Hassan (wife)
- Amadou Hassan (son 9)
- Karima Hassan (daughter 9)

millet: 60 baskets

animals: none

money: 10,000 francs

Household #5

Idi Adamou
Halima Idi (wife)
Hamsatou Idi (daughter, 14)
Souley Idi (son, 13)
Ibrahim Idi (son, 12)
Issoufou Idi (son, 9)
Zenabou Idi (daughter, 8)
Issaka Idi (son, 6)
Mariama Idi (daughter, 5)
Fatima Idi (daughter, 3)
Hassan Idi (son, 2)
Ousseinni Ida (son, 2)
Absatou Idi (daughter, 1)

millet: 30 baskets

animals: none

money: 1000 francs

Household #6

Yacouba Salisou
Fatima Yacouba (wife)
Rabi Yacouba (son, 1)

millet: 20 baskets

animals: one camel, one donkey

money: none

Household #7

Mamadou Halidou
Falamatou Mamadou (wife)
Nana Mamadou (wife)
Amina Mamadou (daughter, 13)
Koko Mamadou (daughter, 11)
Hawa Mamadou (daughter, 7)
Sidi Mamadou (son, 4)

millet: 40 baskets

animals: 2 cattle

money: none

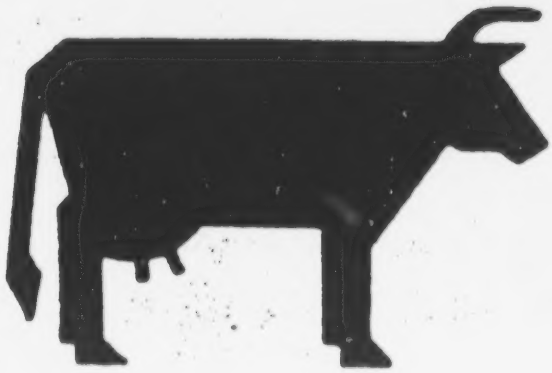
Household #8

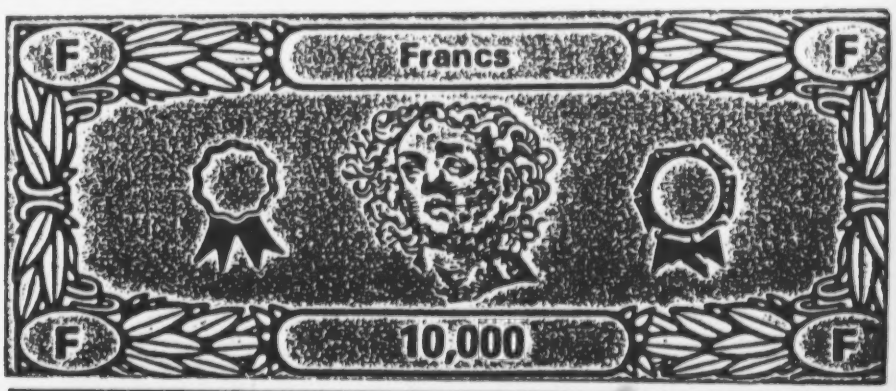
Abara Bala
Jima Abara (wife)
Na Bargo Abara (son, 6)
Baba Abara (daughter, 5)
Maman Abara (son, 3)

millet: 30 baskets

animals: none

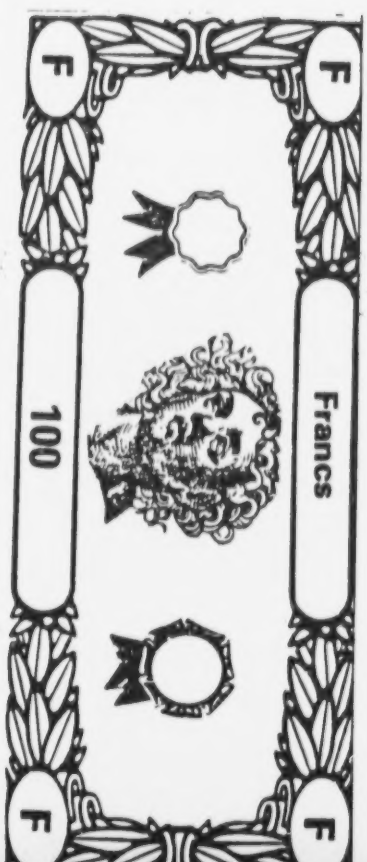
money: none




F
Francs
F
F
10,000
F

F
Francs
F
F
10,000
F

F
Francs
F
F
10,000
F


F
F
100
Francs
F
F